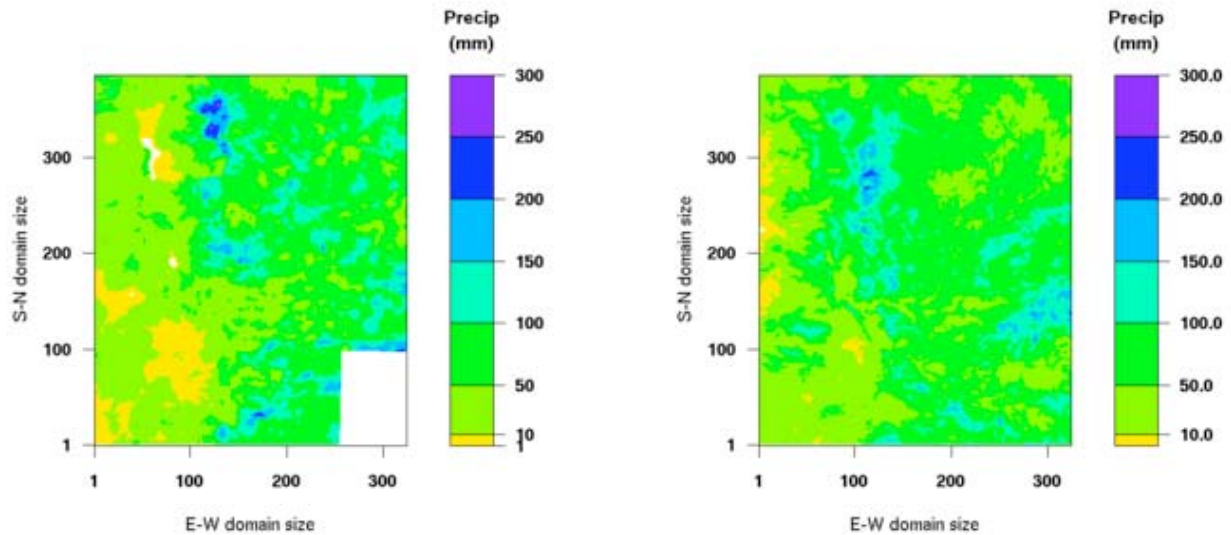
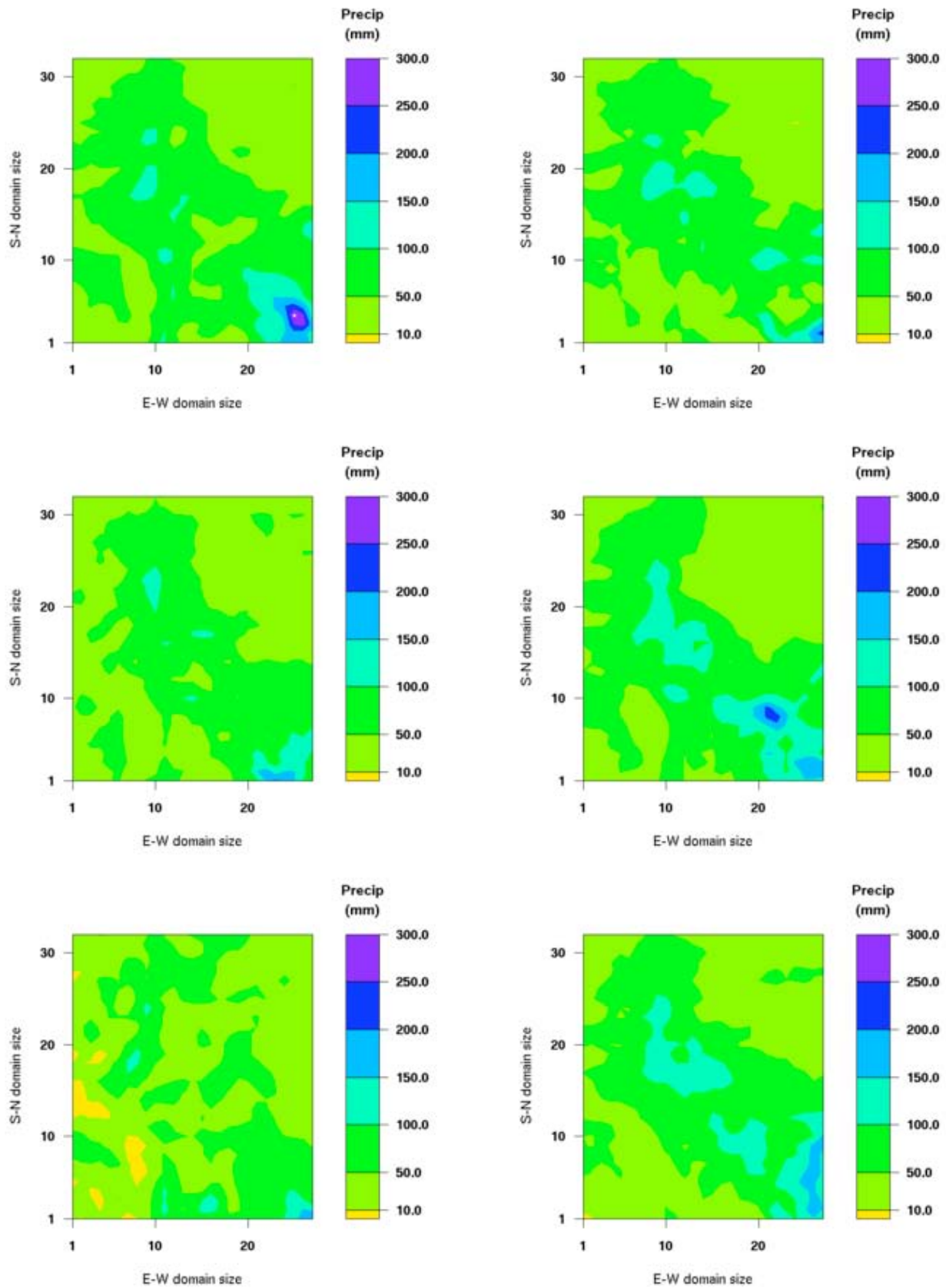


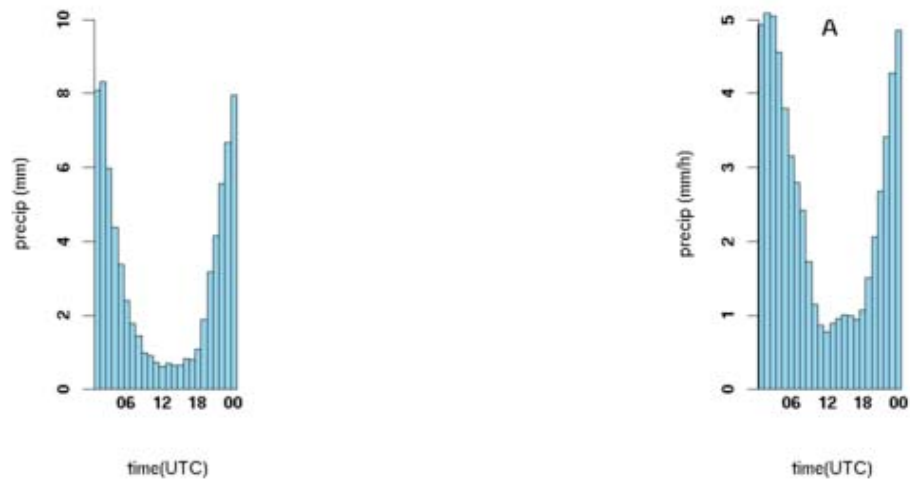
## Toward Better Understanding and More Realistic Simulation of Warm Season Season Precipitation



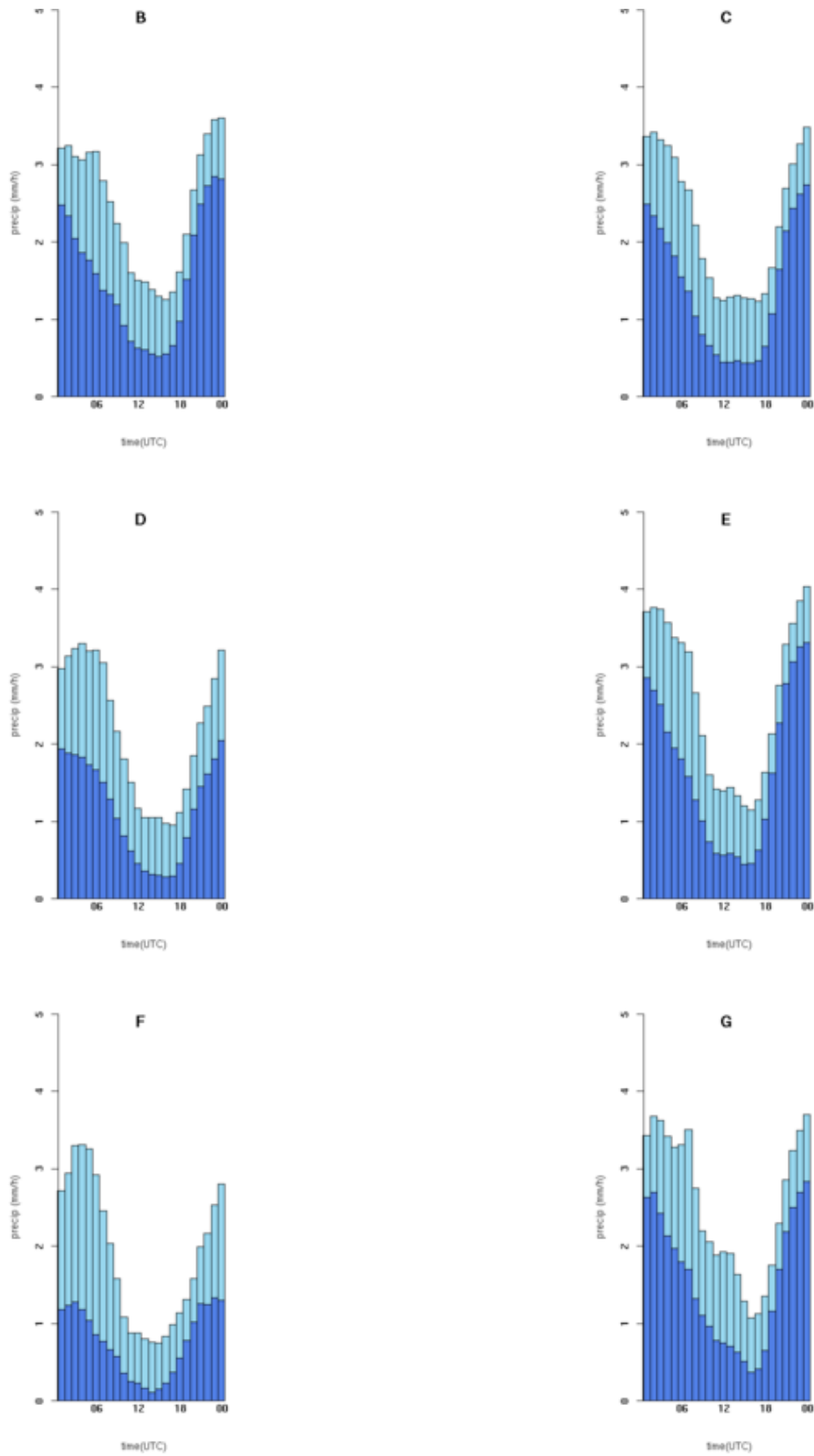
**Figure 1a.** *Accumulated precipitation in June 2004 for Stage4 data (left) and in the high resolution domain (right). White area in the Stage4 plot represents incomplete data to calculate accumulate monthly precipitation.*



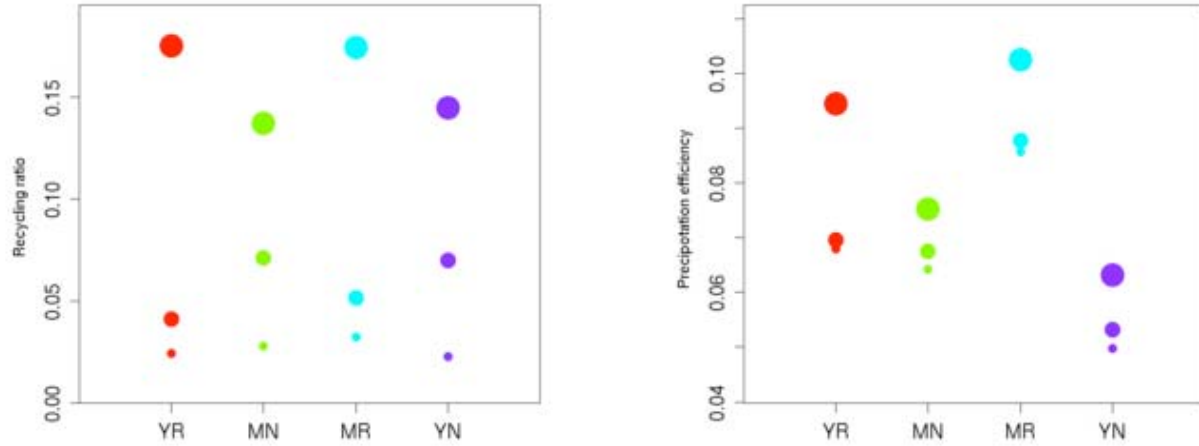
**Figure 1b.** Accumulated precipitation as simulated for June 2004 using various different closures. From top to right and down: Grell-Devenyi ensemble parameterization, GR, W, MC, ST, and AS.



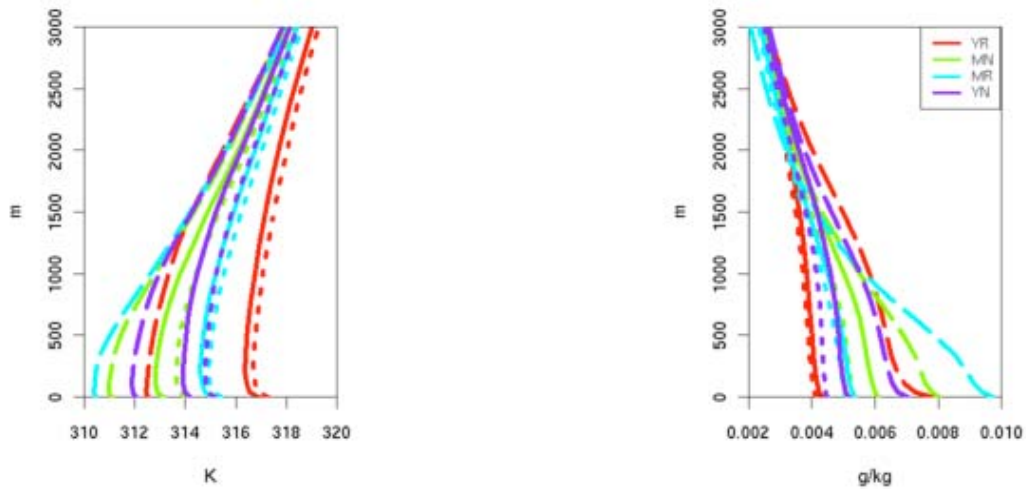
**Figure 2a.** Monthly average diurnal cycle of grid-averaged precipitation: Stage4 data (left), high resolution domain (right).



**Figure 2b.** Monthly averaged diurnal cycle of grid-averaged precipitation: As Figure 1b: from top to right and down: Grell-Devenyi ensemble parameterization (a), GR (b), W(c), MC (d), ST (e), and AS (f). Light blue – resolved precipitation, dark blue – unresolved precipitation.



**Figure 3.** Recycling rate (left) and precipitation efficiency. The first letter indicates the BL scheme: Y – YSU PBL, M- MYJ PBL. The second letter LSM: N- Noah, R- RUCLSM. Dots increase from the minimum soil moisture to the maximum soil moisture.



**Figure 4.** Domain averaged potential temperature (left) and mixing ratio (right) profiles. Solid line- intermediate soil moisture, short dash – dry soil, long dash – moist soil. Colors for BL-LSM combinations given in the legend.